Inspiron One 2020

Owner's Manual

Computer model: Inspiron One 2020
Regulatory model: W06B
Regulatory type: W06B001

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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2013 - 04 **Rev. A00**

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Before You Begin

Turn Off Your Computer and Connected Devices

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Save and close all open files and exit all open programs.
2. Move your mouse pointer to the upper-right or lower-right corner of the screen to open the Charms sidebar, and then click **Settings→ Power→ Shut down.**

   NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.
3. Disconnect your computer and all attached devices from their electrical outlets.
4. Disconnect all telephone cables, network cables, and attached devices from your computer.
5. After the computer is unplugged, press and hold the power button for 5 seconds to ground the system board.

Safety Instructions

Use the following safety guidelines to protect your computer from potential damage and ensure your personal safety.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

WARNING: Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the power source.

CAUTION: To avoid damaging the computer, ensure that the work surface is flat and clean.

CAUTION: To avoid damaging the components and cards, handle them by their edges and avoid touching pins and contacts.

CAUTION: Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.

CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, ensure that the connectors and ports are correctly oriented and aligned.

CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

CAUTION: Press and eject any installed card from the media-card reader.

Recommended Tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Plastic scribe

After Working Inside Your Computer

After you complete replacement procedures, ensure the following:

- Replace all screws and ensure that no stray screws remain inside your computer.
- Place the computer in an upright position.
- Connect any external devices, cables, cards, and any other part(s) you removed before working on your computer.
- Connect your computer and all attached devices to their electrical outlets.

CAUTION: Before turning on your computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may damage your computer.

Technical Overview

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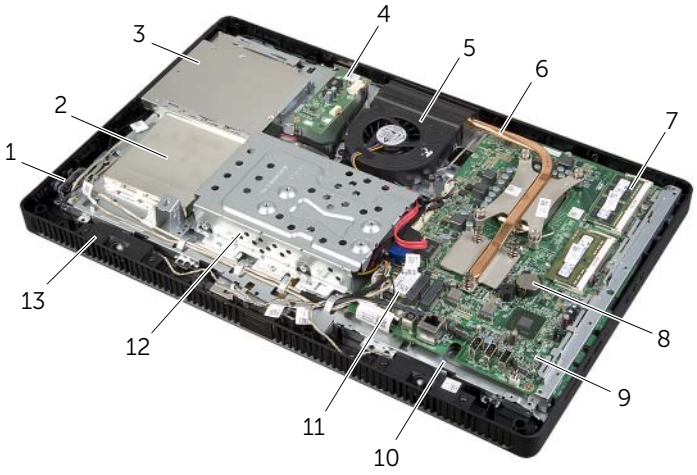
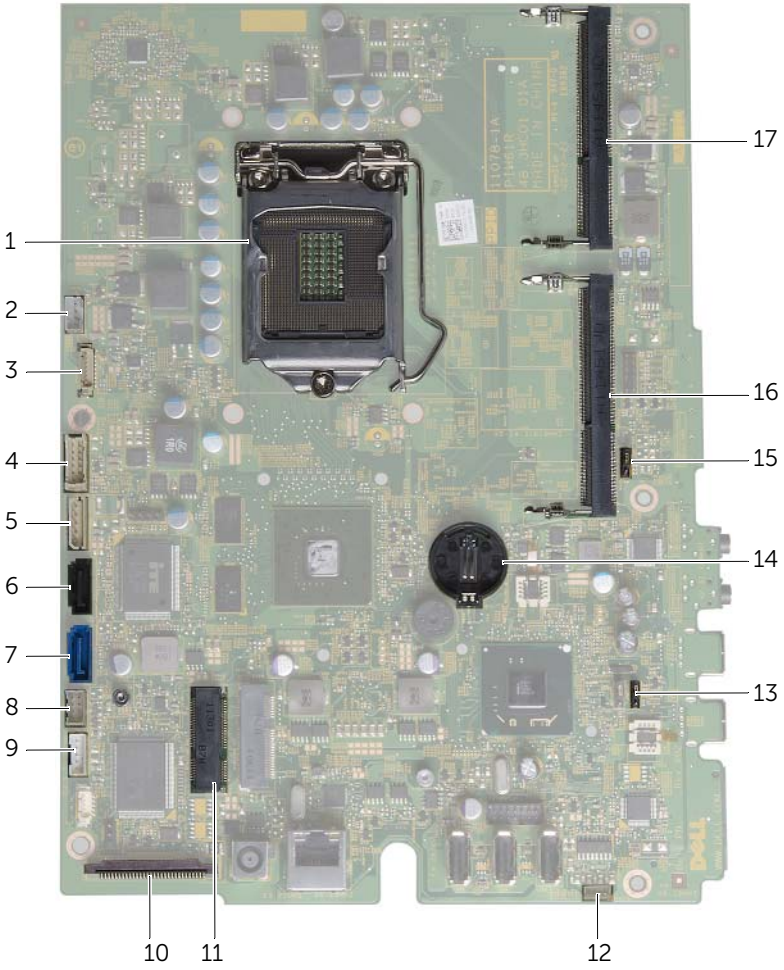
Inside View of Your Computer



1	power-button assembly	2	touchscreen-board cover
3	optical-drive assembly	4	converter board
5	fan	6	processor heat-sink
7	memory module(s)	8	coin-cell battery
9	system board	10	chassis
11	wireless mini-card	12	hard-drive assembly
13	speakers (2)		

System Board Components



1	processor socket	2	fan-cable connector (FANC1)
3	camera-cable connector (WEBCAM)	4	converter-board cable connector (CONVERTER)
5	hard-drive and optical-drive power cable connector (SATAP1)	6	optical-drive cable connector (SATA_ODD)
7	hard-drive cable connector (SATA_HDD)	8	power-button and hard-drive activity light cable connector (PWRCN1)

9	touchscreen-board connector (TOUCH)	10	display-cable connector
11	wireless mini-card connector (MINICARD WIFI)	12	speakers-cable connector (SPEAKER)
13	password jumper (PWCLR1)	14	battery socket (BT1)
15	CMOS jumper (CMOCL1)	16	memory-module connector (DIMMB1)
17	memory-module connector (DIMMA1)		

Removing the Stand Cover

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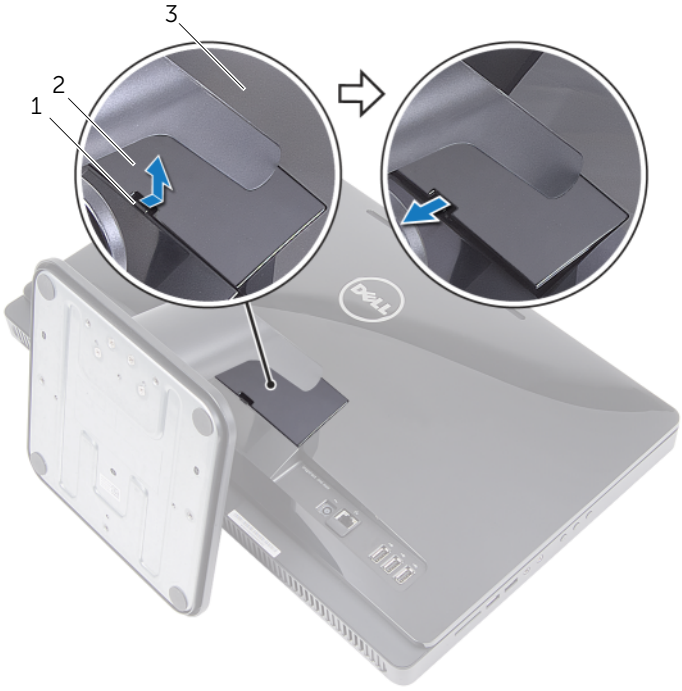
Procedure

CAUTION: Before opening your computer, ensure that you place the computer on a soft cloth or clean surface to avoid any scratches on the display.

1. Place the computer face down on a flat surface.
2. Press the tab on the stand cover and lift the stand cover.
3. Slide and remove the stand cover away from the computer.



1	tab	2	stand cover
3	back cover		

Replacing the Stand Cover

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Procedure

1. Slide the tabs on the stand cover into the slots on the back cover and snap the stand cover until it clicks into place.
2. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Stand

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

Remove the stand cover. See "Removing the Stand Cover" on page 15.

Procedure

1. Remove the screws that secure the stand to the chassis.
2. Pivot the stand upward and slide it away from the computer.

1	stand	2	screws (4)

Replacing the Stand

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Procedure

1. Slide the tabs on the stand into the slots on the back cover.
2. Replace the screws that secure the stand to the chassis.

Postrequisites

1. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
2. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Back Cover

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.

Procedure

1. Starting from above the optical drive, pry the back cover from the display bezel.
2. Lift the back cover off the computer.

1	display bezel	2	back cover

Replacing the Back Cover

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Procedure

Align the tabs on the back cover with the tabs on the display bezel and snap the back cover into place.

Postrequisites

1. Replace the stand. See "Replacing the Stand" on page 18.
2. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
3. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Hard Drive

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

CAUTION: To avoid data loss, do not remove the hard drive while the computer is On or in Sleep state.

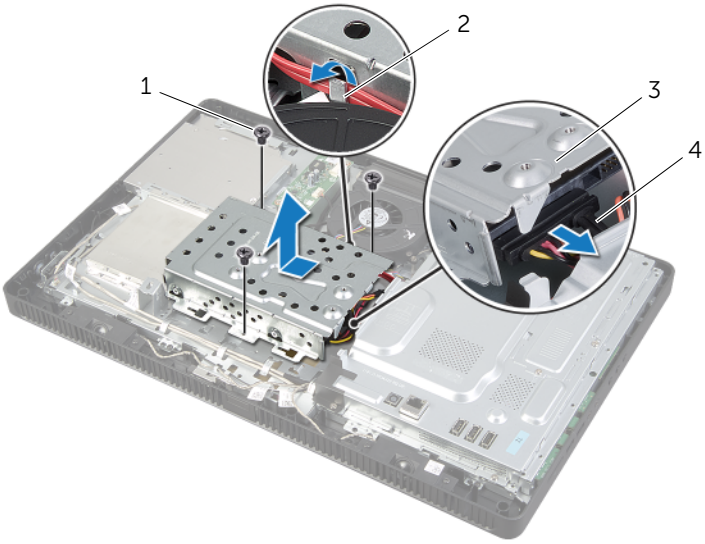
CAUTION: Hard drives are fragile. Exercise care when handling the hard drive.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

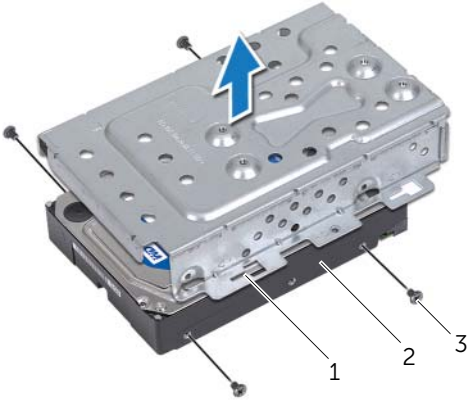
1. Remove the optical-drive cable and fan cable from the routing guide on the hard-drive cage.
2. Remove the screws that secure the hard-drive assembly to the chassis.
3. Slide and lift the hard-drive assembly and then disconnect the power and data cable from the connector on the hard drive.



1	screws (3)	2	routing guide
3	hard-drive assembly	4	power and data cable

4 Remove the screws that secure the hard-drive cage to the hard drive.

5 Lift the hard-drive cage off the hard drive.



1	hard-drive cage	2	hard drive
3	screws (4)		

Replacing the Hard Drive

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CAUTION: Hard drives are fragile. Exercise care when handling the hard drive.

Procedure

1. Align the screw holes on the hard-drive cage with the screw holes on the hard drive.
2. Replace the screws that secure the hard-drive cage to the hard drive.
3. Connect the power and data cable to the connector on the hard-drive assembly.
4. Place the hard-drive assembly on the chassis and slide the hard-drive assembly into place.

   NOTE: Ensure that the slots on the hard-drive cage are secured under the tabs on the chassis.
5. Replace the screws that secure the hard-drive assembly to the chassis.
6. Route the optical-drive cable and fan cable through the routing guide on the hard-drive cage.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Optical Drive

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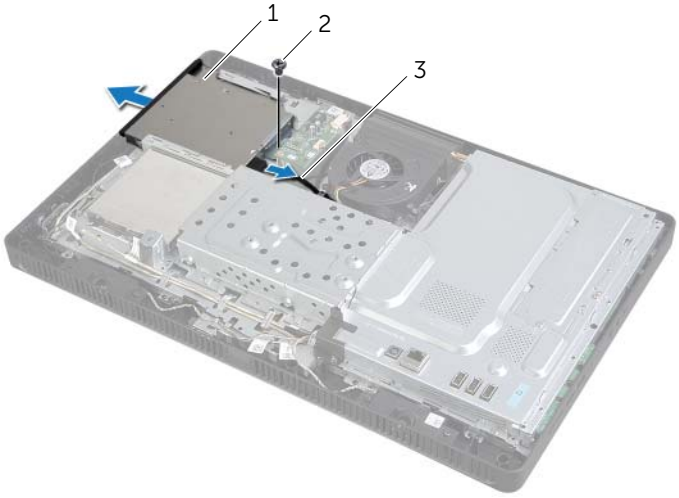
Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

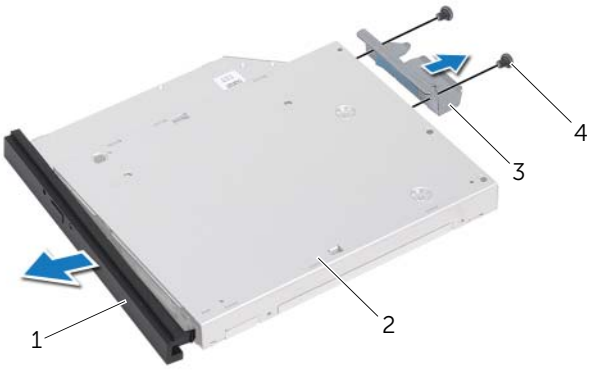
1. Disconnect the power and data cable from the connector on the optical-drive assembly.
2. Remove the screw that secures the optical-drive assembly to the chassis.
3. Slide the optical-drive assembly out of the optical-drive bay.



1	optical-drive assembly	2	screw
3	power and data cable		

4 Carefully pry the optical-drive bezel and remove it from the optical-drive assembly.

5 Remove the screws that secure the optical-drive bracket to the optical drive and remove the optical-drive bracket from the optical drive.



1	optical-drive bezel	2	optical drive
3	optical-drive bracket	4	screws (2)

Replacing the Optical Drive

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Procedure

1. Align the screw holes on the optical-drive bracket with the screw holes on the optical drive.
2. Replace the screws that secure the optical-drive bracket to the optical drive.
3. Align the tabs on the optical-drive bezel with the slots on the optical-drive assembly and snap the optical-drive bezel into place.
4. Slide the optical-drive assembly into the optical-drive bay until it is fully seated.
5. Replace the screw that secures the optical-drive assembly to the chassis.
6. Connect the power and data cable to the connector on the optical-drive assembly.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Converter Board

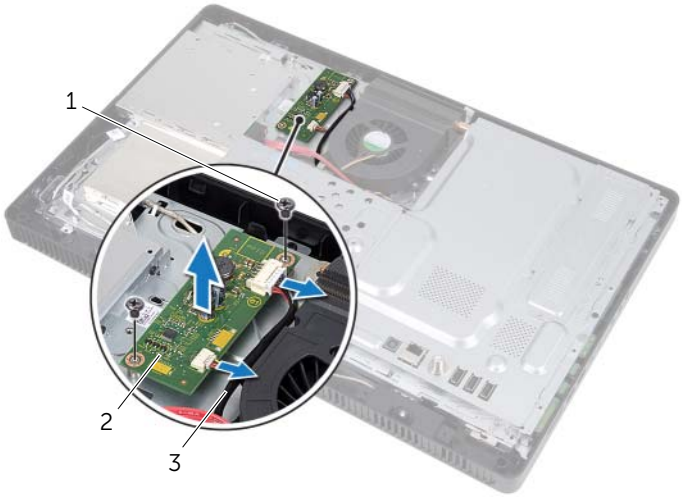
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1. Disconnect the converter-board cables from the connectors on the converter board.
2. Remove the screws that secure the converter board to the chassis.
3. Lift the converter board away from the chassis.



1	screws (2)	2	converter board
3	converter-board cables (2)		

Replacing the Converter Board

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Procedure

1. Align the screw holes on the converter board with the screw holes on the chassis.
2. Replace the screws that secure the converter board to the chassis.
3. Connect the converter-board cables to the connectors on the converter board.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Touchscreen Board

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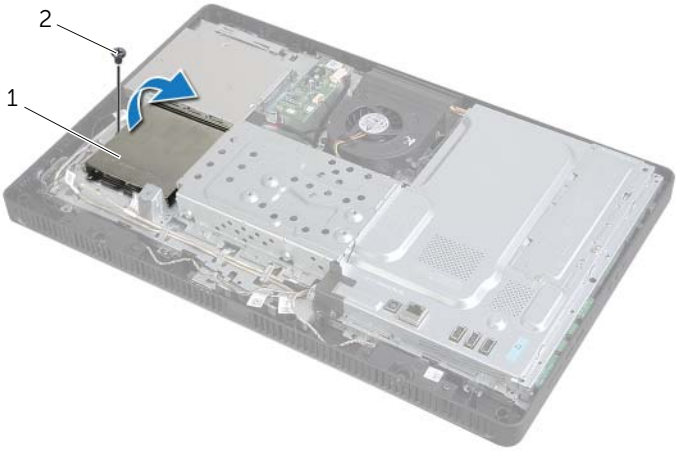
Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1. Remove the screw that secures the touchscreen-board cover to the chassis.
2. Pivot the touchscreen-board cover upward and slide it off the slot on the chassis.



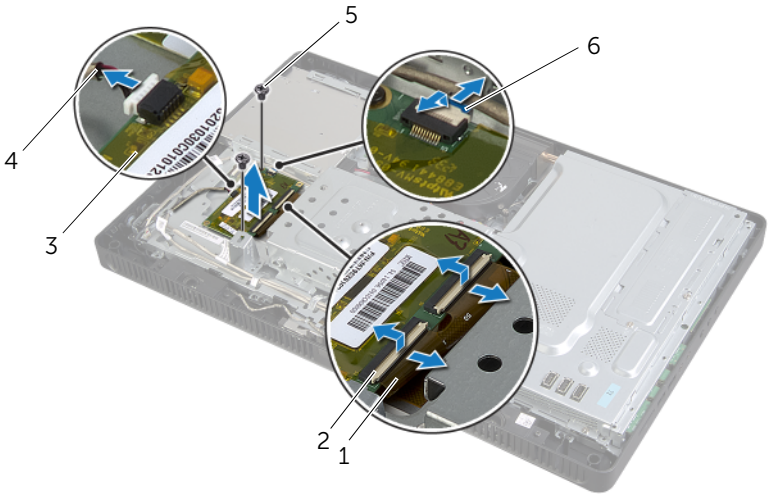
1	touchscreen-board cover	2	screw

3 Lift the connector latches and disconnect the display cable and touchscreen cable from the connectors on the touchscreen board.

4 Disconnect the touchscreen-board cable from the connector on the touchscreen board.

5 Remove the screws that secure the touchscreen board to the chassis.

6 Lift the touchscreen board away from the chassis.



1	display cable	2	connector latches (3)
3	touchscreen board	4	touchscreen-board cable
5	screws (2)	6	touchscreen cable

Replacing the Touchscreen Board

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Procedure

1. Align the screw holes on the touchscreen board with the screw holes on the chassis.
2. Replace the screws that secure the touchscreen board to the chassis.
3. Connect the touchscreen-board cable to the connector on the touchscreen board.
4. Slide the display cable and touchscreen cable into the connectors on the touchscreen board and press down on the connector latches to secure the cables.
5. Slide the tab on the touchscreen-board cover into the slot on the chassis and align the screw hole on the touchscreen-board cover with the screw hole on the chassis.
6. Replace the screw that secures the touchscreen-board cover to the chassis.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Memory Module(s)

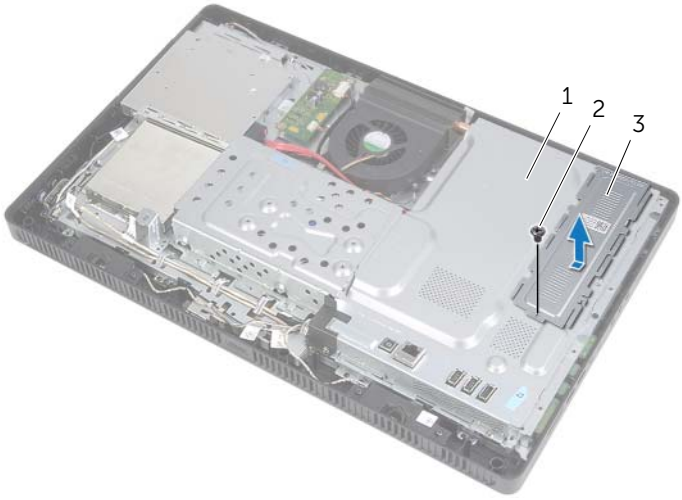
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

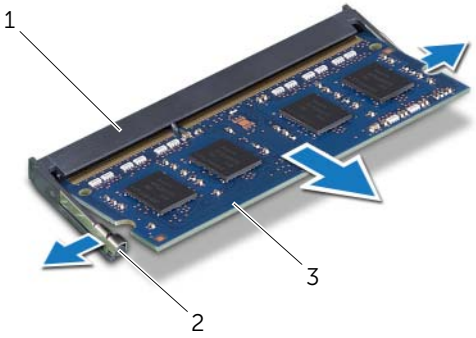
1. Remove the screw that secures the memory-module shield to the system-board shield.
2. Slide the memory-module shield toward the top of the computer, and lift it off the system-board shield.



1	system-board shield	2	screw
3	memory-module shield		

3 Use your fingertips to spread apart the securing clips on each end of the memory module connector until the memory module pops up.

4 Remove the memory module from the memory-module connector.



1	memory-module connector	2	securing clips (2)
3	memory module		

Replacing the Memory Module(s)

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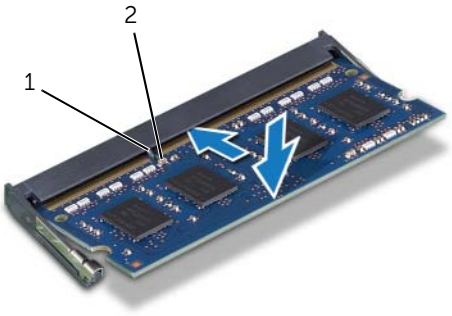
Procedure

1. Align the notch on the memory module with the tab on the memory-module connector.
2. Slide the memory module firmly into the connector at a 45-degree angle, and press the memory module down until it clicks into place.

   NOTE: If you do not hear the click, remove the memory module and reinstall it.



1	tab	2	notch

3. Insert the tabs on the memory-module shield into the slots on the system-board shield and then slide the memory-module shield toward the bottom of the computer.

   NOTE: Ensure that the screw hole on the memory-module shield aligns with the screw hole on the system-board shield.
4. Replace the screw that secures the memory-module shield to the system-board shield.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the System-Board Shield

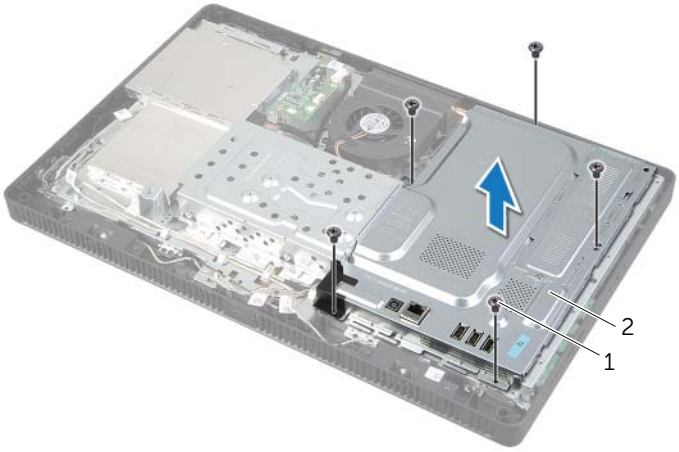
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.

Procedure

1. Remove the screws that secure the system-board shield to the chassis.
2. Lift the system-board shield off the chassis.



1	screws (5)	2	system-board shield

Replacing the System-Board Shield

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the system-board shield with the screw holes on the chassis.
2. Replace the screws that secure the system-board shield to the chassis.

Postrequisites

1. Replace the back cover. See "Replacing the Back Cover" on page 20.
2. Replace the stand. See "Replacing the Stand" on page 18.
3. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
4. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Wireless Mini-Card

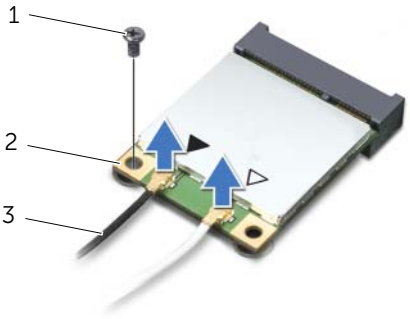
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. Locate the wireless mini-card on the system board. See "System Board Components" on page 13.
2. Disconnect the antenna cables from the wireless mini-card.
3. Remove the screw that secures the wireless mini-card to the system-board connector.



1	screw	2	wireless mini-card
3	antenna cables (2)		

4 Lift the wireless mini-card away from the system-board connector.

Replacing the Wireless Mini-Card

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

CAUTION: To avoid damage to the wireless mini-card, ensure that there are no cables under the wireless mini-card.

1. Align the notch on the wireless mini-card with the tab on the system-board connector.
2. Insert the wireless mini-card at a 45-degree angle into the system-board connector.
3. Press the other end of the wireless mini-card down and replace the screw that secures the wireless mini-card to the system-board connector.
4. Connect the appropriate antenna cables to the wireless mini-card.

   The following table provides the wireless-antenna cable color schemes for the wireless mini-cards supported by your computer.

Connectors on the mini-card	Wireless-antenna cable color schemes
WLAN + Bluetooth (two cables)	
Main WLAN + Bluetooth (white triangle)	white
Auxiliary WLAN + Bluetooth (black triangle)	black

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Coin-Cell Battery

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

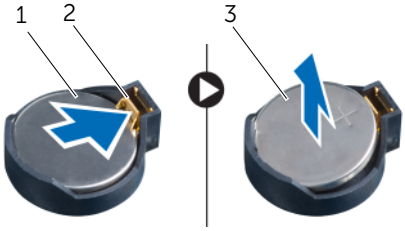
CAUTION: Removing the coin-cell battery resets the BIOS settings to default. It is recommended that you note the BIOS settings before removing the coin-cell battery.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. Locate the battery socket on the system board. See "System Board Components" on page 13.
2. Press the securing clip away from the coin-cell battery until the coin-cell battery pops out.
3. Lift the coin-cell battery out of its socket.



1	coin-cell battery	2	securing clip
3	positive side of the coin-cell battery		

Replacing the Coin-Cell Battery

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

WARNING: The battery may explode if installed incorrectly. Replace the battery only with the same or equivalent type. Discard used batteries according to the manufacturer's instructions.

Procedure

Insert a new coin-cell battery (CR2032) into the battery socket with the positive side facing up, and press the battery into place.

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Speakers

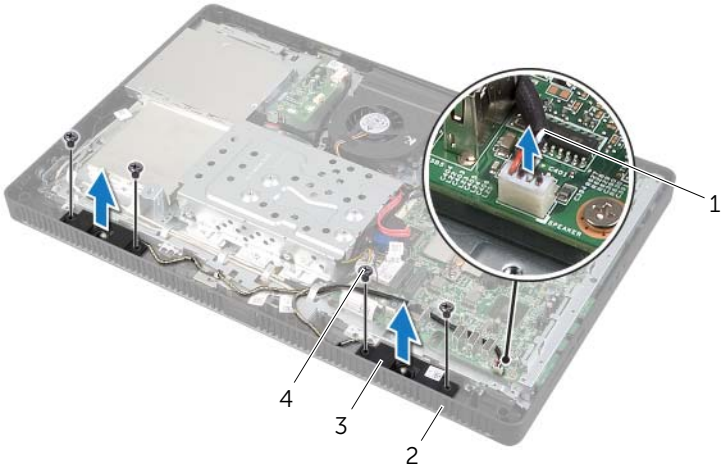
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. Disconnect the speakers cable from the connector (SPEAKER) on the system board.
2. Make note of the speakers cable routing and remove the cable from the routing guides.
3. Remove the screws that secure the speakers to the display bezel.
4. Lift the speakers along with the cable off the display bezel.



1	speakers cable	2	display bezel
3	speakers (2)	4	screws (4)

Replacing the Speakers

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the speakers with the screw holes on the display bezel.
2. Replace the screws that secure the speakers to the display bezel.
3. Route the speakers cable through the routing guides.
4. Connect the speakers cable to the connector (SPEAKER) on the system board.

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Fan

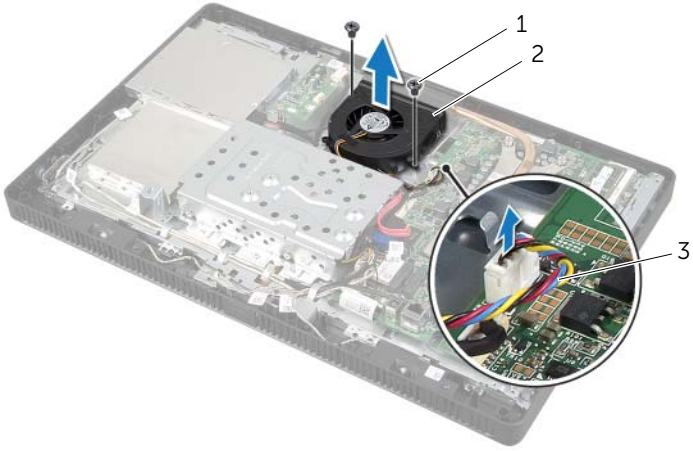
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. Disconnect the fan cable from the connector (FANC1) on the system board.
2. Remove the fan cable from the routing guide on the hard-drive cage.
3. Remove the screws that secure the fan to the chassis.
4. Lift the fan along with its cable away from the chassis.



1	screws (2)	2	fan
3	fan cable		

Replacing the Fan

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the fan with the screw holes on the chassis.
2. Replace the screws that secure the fan to the chassis.
3. Route the fan cable through the routing guide on the hard-drive cage.
4. Connect the fan cable to the connector (FANC1) on the system board.

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Power-Button Assembly

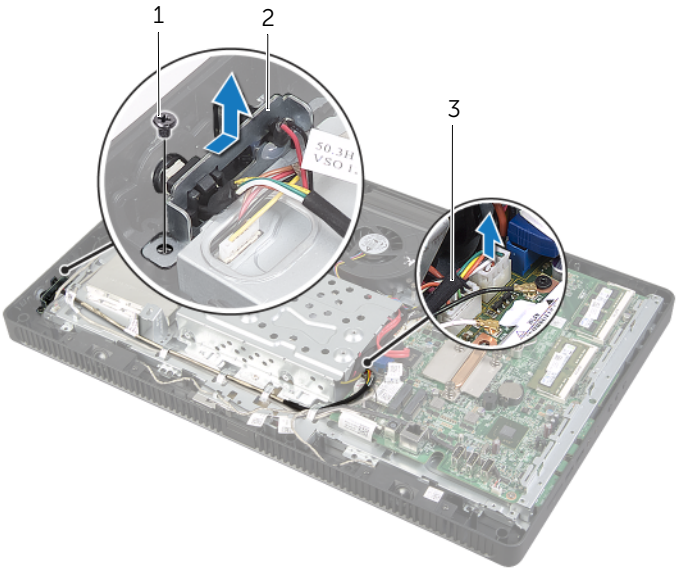
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. Disconnect the power-button and hard-drive activity light cable from the connector (PWRCN1) on the system board.
2. Make a note of the power-button and hard-drive activity light cable routing and remove it from the routing guides.
3. Remove the screw that secures the power-button assembly to the display bezel.
4. Slide the power-button assembly toward the top of the computer and then lift it away from the display bezel.



1	screw	2	power-button assembly
3	power-button and hard-drive activity light cable		

Replacing the Power-Button Assembly

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Place the power-button assembly on the display bezel and then slide it toward the bottom of the computer.

   NOTE: Ensure that the slot on the power-button assembly is secured under the tab on the display bezel.
2. Align the screw hole on the power-button assembly with the screw hole on the display bezel.
3. Replace the screw that secures the power-button assembly to the display bezel.
4. Route the power-button and hard-drive activity light cable through the routing guides.
5. Connect the power-button and hard-drive activity light cable to the connector (PWRCN1) on the system board.

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Processor Heat-Sink

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

WARNING: The heat sink may be hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.

CAUTION: To ensure maximum cooling for the processor, do not touch the heat transfer areas on the processor heat-sink. The oils in your skin can reduce the heat transfer capability of the thermal grease.

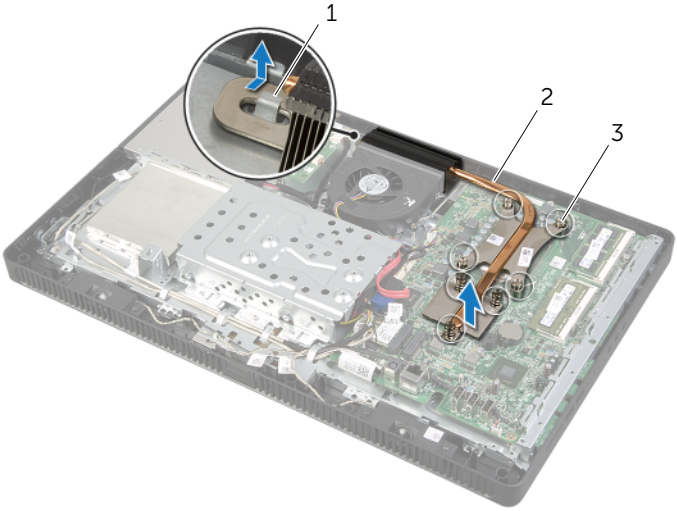
Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.

Procedure

1. In sequential order (indicated on the processor heat-sink), loosen the captive screws that secure the processor heat-sink to the system board.
2. Carefully lift the processor heat-sink and release it from the tab on the chassis.

NOTE: The appearance of the processor heat-sink may vary based on your computer model.



1	tab	2	processor heat-sink
3	captive screws (7)		

Replacing the Processor Heat-Sink

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

CAUTION: Incorrect alignment of the processor heat-sink can cause damage to the system board and processor.

Procedure

NOTE: The original thermal grease can be reused if the original processor and processor heat-sink are reinstalled together. If either the processor or the processor heat-sink is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

1. Clean the thermal grease from the bottom of the processor heat-sink and reapply the thermal grease.
2. Slide the slot on the processor heat-sink into the tab on the chassis.
3. Align the captive screws on the processor heat-sink with the screw holes on the system board.
4. In sequential order (indicated on the processor heat-sink), tighten the captive screws that secure the processor heat-sink to the system board.

Postrequisites

1. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
2. Replace the back cover. See "Replacing the Back Cover" on page 20.
3. Replace the stand. See "Replacing the Stand" on page 18.
4. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
5. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Processor

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

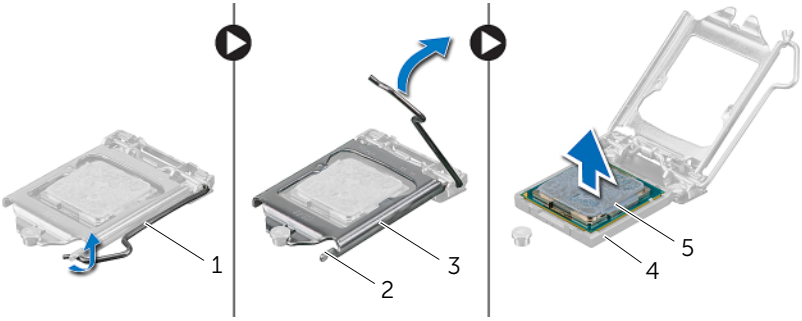
CAUTION: Processors are fragile. Handle the processor only by the edges and do not touch the metal pins.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
5. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.

Procedure

1. Press the release-lever down and then pull it outwards to release it from the securing tab.
2. Extend the release lever completely to open the processor cover.
   Leave the release lever extended in the release position so that the socket is ready for the new processor.
3. Gently lift the processor to remove it from the socket.



1	release lever	2	tab
3	processor cover	4	socket
5	processor		

Replacing the Processor

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

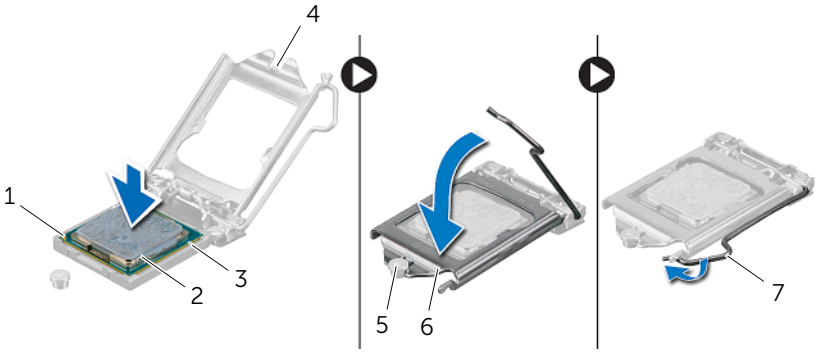
1. Ensure that the release lever on the processor socket is fully extended in the open position.

CAUTION: You must position the processor correctly in the processor socket to avoid permanent damage to the processor.

2. Orient the alignment notches on the processor with the alignment tabs on the socket.
3. Align the pin-1 corner on the processor with the pin-1 corner on the processor socket, and then place the processor in the processor socket.

CAUTION: Ensure that the processor-cover notch is positioned underneath the alignment post.

4. When the processor is fully seated in the socket, close the processor cover.
5. Pivot the release lever down and place it under the tab on the processor cover.



1	processor pin-1 indicator	2	processor
3	alignment tabs (2)	4	processor-cover notch
5	alignment post	6	processor cover
7	release lever		

6 Clean the thermal grease from the bottom of the processor heat-sink.

7 Apply the new thermal grease to the top of the processor.

Postrequisites

1 Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.

2 Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.

3 Replace the back cover. See "Replacing the Back Cover" on page 20.

4 Replace the stand. See "Replacing the Stand" on page 18.

5 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

6 Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the System Board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the BIOS after you replace the system board.

NOTE: Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect them correctly after you replace the system board.

Prerequisites

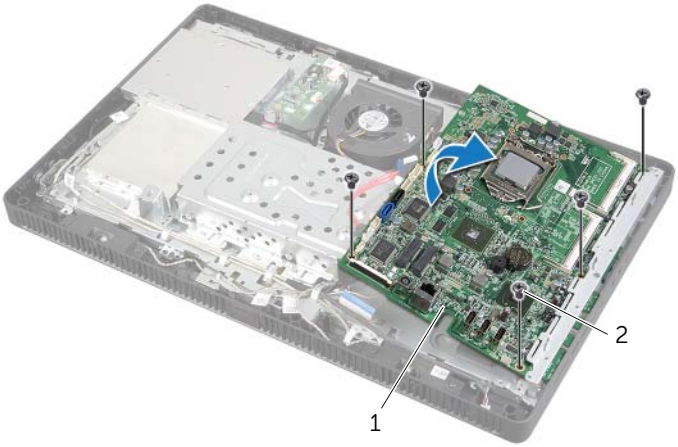
1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
5. Remove the memory module(s). See "Removing the Memory Module(s)" on page 33.
6. Remove the wireless mini-card. See "Removing the Wireless Mini-Card" on page 39.
7. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
8. Remove the processor. See "Removing the Processor" on page 55.

Procedure

1. Disconnect all the cables from their connectors on the system board.

   NOTE: For information on the location of the connectors, see "System Board Components" on page 13.

2. Remove the screws that secure the system board to the chassis.
3. Lift the system board at an angle and then slide it to release the connectors on the system board from the slots on the chassis.
4. Remove the system board from the chassis.



1	system board	2	screws (5)

Replacing the System Board

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the system setup after you replace the system board.

Procedure

1. Slide the system board connectors into the slots on the chassis and align the screw holes on the system board with the screw holes on the chassis.
2. Replace the screws that secure the system board to the chassis.
3. Connect all the required cables to their connectors on the system board.

Postrequisites

1. Replace the processor. "Replacing the Processor" on page 57.
2. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
3. Replace the wireless mini-card. See "Replacing the Wireless Mini-Card" on page 41.
4. Replace the memory module(s). See "Replacing the Memory Module(s)" on page 35.
5. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
6. Replace the back cover. See "Replacing the Back Cover" on page 20.
7. Replace the stand. See "Replacing the Stand" on page 18.
8. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
9. Follow the instructions in "After Working Inside Your Computer" on page 11.

Entering the Service Tag in the BIOS

1. Turn on the computer.
2. Press <F2> during POST to enter the system setup program.
3. Navigate to the main tab and enter the Service Tag in the **Service Tag Input** field. See "System Setup Options" on page 82.

Removing the Display Panel

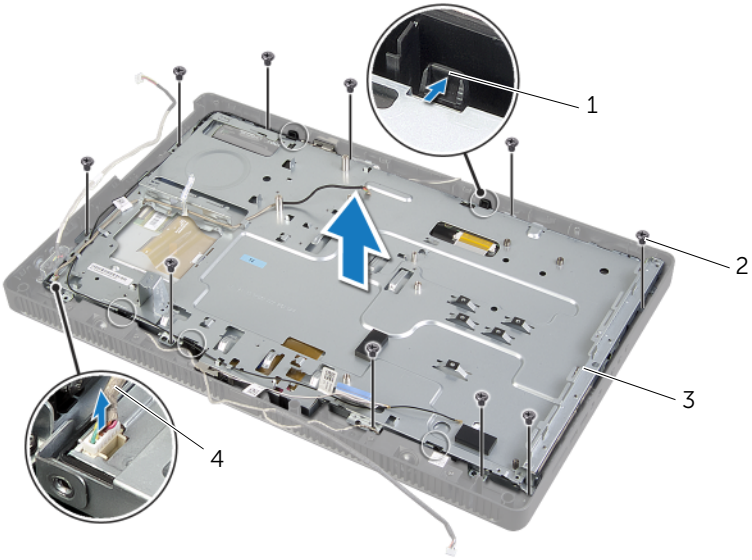
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 3 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 28.
7. Remove the touchscreen board. See "Removing the Touchscreen Board" on page 30.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
9. Remove the fan. See "Removing the Fan" on page 47.
10. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
11. Follow the instructions from step 1 to step 3 in "Removing the System Board" on page 59.

Procedure

1. Disconnect the converter-board cable from the connector on the display panel.
2. Remove the screws that secure the chassis to the display bezel.
3. Push and release the tabs that secure the chassis to the display bezel.
4. Lift the chassis off the display panel.

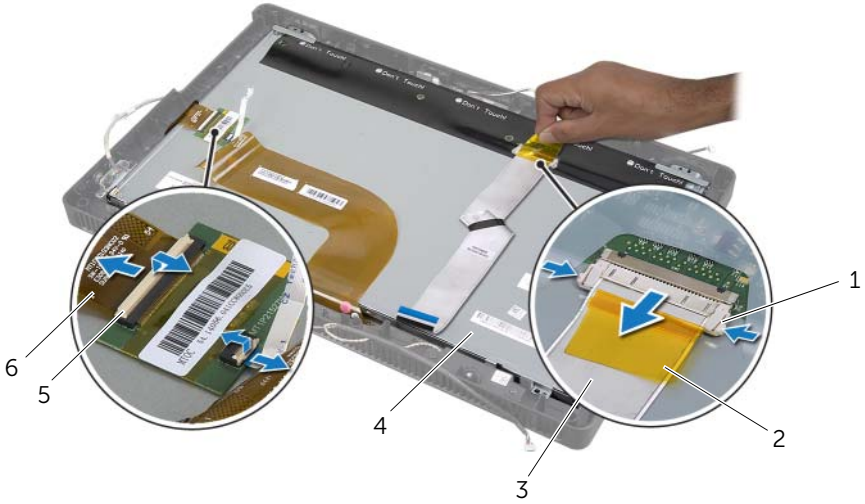


1	tabs (5)	2	screws (10)
3	chassis	4	converter-board cable

5 Peel and release the tape that secures the display cable to the connector on the display panel.

6 Press the release latch on either side of the display cable and then pull the display cable to disconnect it from the connector on the display panel.

7 Lift the connector latches and disconnect the touchscreen cables from the connectors on the display panel.



1	release latches (2)	2	tape
3	display cable	4	display panel
5	connector latches (2)	6	touchscreen cables (2)

8 Remove the display cable and the touchscreen cables from the display panel.

9 Lift the display panel off the display bezel and place it on a clean surface.

1	display panel	2	display bezel

10 Remove the screws that secure the display-panel brackets to the display panel.

11 Remove the display-panel brackets from the display panel.

1	display panel	2	display-panel brackets (4)
3	screws (4)		

Replacing the Display Panel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Align the screw holes on the display-panel brackets with the screw holes on the display panel.
2. Replace the screws that secure the display-panel brackets to the display panel.
3. Align the screw holes on the display panel with the protrusions on the display bezel and place the display panel on the display bezel.

   NOTE: Ensure that no cables are under the display panel.
4. Connect the display cable to the connector on the display panel and secure it with the tape.
5. Slide the touchscreen cables into the connectors on the display panel and press down on the connector latches to secure the cables.
6. Align the screw holes on the chassis with the screw holes on the display bezel and snap the chassis into place.
7. Replace the screws that secure the chassis to the display bezel.
8. Connect the converter-board cable to the connector on the display panel.

Postrequisites

1. Follow the instructions from step 1 to step 3 in "Replacing the System Board" on page 61.
2. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
3. Replace the fan. See "Replacing the Fan" on page 48.
4. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
5. Replace the touchscreen board. See "Replacing the Touchscreen Board" on page 32.
6. Replace the converter board. See "Replacing the Converter Board" on page 29.
7. Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 24.

8 Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 27.

9 Replace the back cover. See "Replacing the Back Cover" on page 20.

10 Replace the stand. See "Replacing the Stand" on page 18.

11 Replace the stand cover. See "Replacing the Stand Cover" on page 16.

12 Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Camera Module

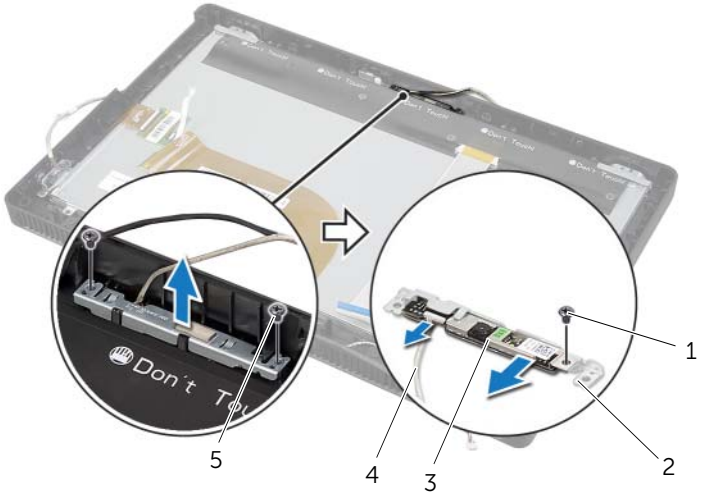
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 3 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 28.
7. Remove the touchscreen board. See "Removing the Touchscreen Board" on page 30.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
9. Remove the fan. See "Removing the Fan" on page 47.
10. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
11. Follow the instructions from step 1 to step 3 in "Removing the System Board" on page 59.
12. Follow the instructions from step 1 to step 4 in "Removing the Display Panel" on page 62.

Procedure

1. Remove the screws that secure the camera assembly to the display bezel.
2. Carefully lift the camera assembly and turn it over.
3. Disconnect the camera cable from the connector on the camera module.
4. Remove the screw that secures the camera module to the camera-module bracket.
5. Slide and remove the camera module away from the camera-module bracket.



1	screw	2	camera-module bracket
3	camera assembly	4	camera cable
5	screws (2)		

Replacing the Camera Module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Slide the camera module into the camera-module bracket and align the screw hole on the came module with the screw hole on the camera-module bracket.
2. Replace the screw that secures the camera module to the camera-module bracket.
3. Connect the camera cable to the connector on the camera module.
4. Align the screw holes on the camera assembly with the screw holes on the display bezel.
5. Replace the screws that secure the camera assembly to the display bezel.

Postrequisites

1. Follow the instructions from step 6 to step 8 in "Replacing the Display Panel" on page 67.
2. Follow the instructions from step 1 to step 3 in "Replacing the System Board" on page 61.
3. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
4. Replace the fan. See "Replacing the Fan" on page 48.
5. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
6. Replace the touchscreen board. See "Replacing the Touchscreen Board" on page 32.
7. Replace the converter board. See "Replacing the Converter Board" on page 29.
8. Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 24.
9. Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 27.
10. Replace the back cover. See "Replacing the Back Cover" on page 20.
11. Replace the stand. See "Replacing the Stand" on page 18.
12. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
13. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Microphone Module

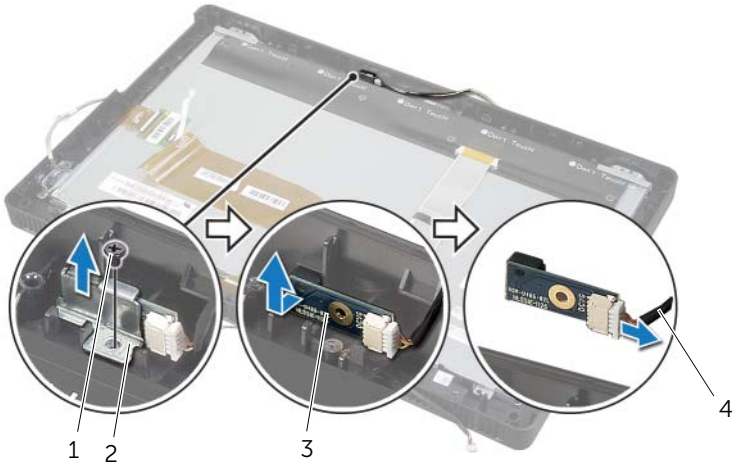
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 3 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 28.
7. Remove the touchscreen board. See "Removing the Touchscreen Board" on page 30.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
9. Remove the fan. See "Removing the Fan" on page 47.
10. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
11. Follow the instructions from step 1 to step 3 in "Removing the System Board" on page 59.
12. Follow the instructions from step 1 to step 4 in "Removing the Display Panel" on page 62.

Procedure

1. Remove the screw that secures the microphone-module bracket to the display bezel.
2. Lift the microphone-module bracket off the display bezel.
3. Slide and lift the microphone module out of the slot on the display bezel.
4. Disconnect the microphone cable from the connector on the microphone module.



1	screw	2	microphone-module bracket
3	microphone module	4	microphone cable

Replacing the Microphone Module

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Connect the microphone cable to the connector on the microphone module.
2. Align the microphone module with the slot on the display bezel and slide the microphone-module into the slot on the display bezel.
3. Align the screw hole on the microphone-module bracket with the screw hole on the display bezel.
4. Replace the screw that secures the microphone-module bracket to the display bezel.

Postrequisites

1. Follow the instructions from step 6 to step 8 in "Replacing the Display Panel" on page 67.
2. Follow the instructions from step 1 to step 3 in "Replacing the System Board" on page 61.
3. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
4. Replace the fan. See "Replacing the Fan" on page 48.
5. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
6. Replace the touchscreen board. See "Replacing the Touchscreen Board" on page 32.
7. Replace the converter board. See "Replacing the Converter Board" on page 29.
8. Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 24.
9. Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 27.
10. Replace the back cover. See "Replacing the Back Cover" on page 20.
11. Replace the stand. See "Replacing the Stand" on page 18.
12. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
13. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Antenna Modules

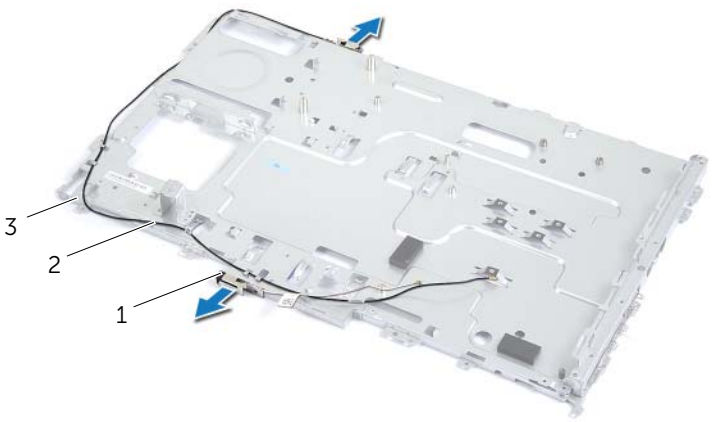
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 3 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 28.
7. Remove the touchscreen board. See "Removing the Touchscreen Board" on page 30.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
9. Remove the fan. See "Removing the Fan" on page 47.
10. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
11. Follow the instructions from step 1 to step 3 in "Removing the System Board" on page 59.
12. Follow the instructions from step 1 to step 4 in "Removing the Display Panel" on page 62.

Procedure

1. Place the chassis on a clean surface.
2. Note the location of the antenna modules on the chassis and pry the antenna modules from the chassis.
3. Note the antenna cables routing and remove the cables from the routing guides.
4. Lift the antenna modules along with its cable off the chassis.



1	antenna modules (2)	2	antenna cables (2)
3	chassis		

Replacing the Antenna Modules

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

1. Route the antenna cables through the routing guides on the chassis.
2. Adhere the antenna modules to the chassis.

Postrequisites

1. Follow the instructions from step 6 to step 8 in "Replacing the Display Panel" on page 67.
2. Follow the instructions from step 1 to step 3 in "Replacing the System Board" on page 61.
3. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
4. Replace the fan. See "Replacing the Fan" on page 48.
5. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
6. Replace the touchscreen board. See "Replacing the Touchscreen Board" on page 32.
7. Replace the converter board. See "Replacing the Converter Board" on page 29.
8. Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 24.
9. Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 27.
10. Replace the back cover. See "Replacing the Back Cover" on page 20.
11. Replace the stand. See "Replacing the Stand" on page 18.
12. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
13. Follow the instructions in "After Working Inside Your Computer" on page 11.

Removing the Display Bezel

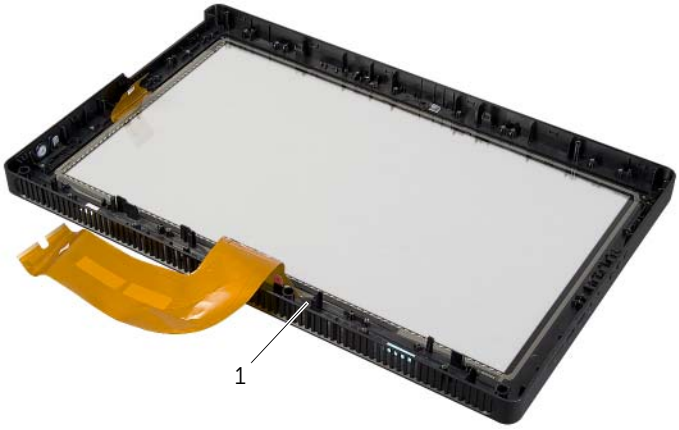
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Follow the instructions from step 1 to step 3 in "Removing the Optical Drive" on page 25.
5. Follow the instructions from step 1 to step 3 in "Removing the Hard Drive" on page 21.
6. Remove the converter board. See "Removing the Converter Board" on page 28.
7. Remove the touchscreen board. See "Removing the Touchscreen Board" on page 30.
8. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
9. Remove the fan. See "Removing the Fan" on page 47.
10. Remove the power-button assembly. See "Removing the Power-Button Assembly" on page 49.
11. Remove the processor heat-sink. See "Removing the Processor Heat-Sink" on page 52.
12. Follow the instructions from step 1 to step 3 in "Removing the System Board" on page 59.
13. Follow the instructions from step 1 to step 9 in "Removing the Display Panel" on page 62.
14. Remove the camera module. See "Removing the Camera Module" on page 69.
15. Remove the microphone module. See "Removing the Microphone Module" on page 72.

Procedure

Remove the display bezel.



1	display bezel

Replacing the Display Bezel

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

Place the display bezel on a clean surface.

Postrequisites

1. Replace the microphone module. See "Replacing the Microphone Module" on page 74.
2. Replace the camera module. See "Replacing the Camera Module" on page 71.
3. Follow the instructions from step 3 to step 8 in "Replacing the Display Panel" on page 67.
4. Follow the instructions from step 1 to step 3 in "Replacing the System Board" on page 61.
5. Replace the processor heat-sink. See "Replacing the Processor Heat-Sink" on page 54.
6. Replace the power-button assembly. See "Replacing the Power-Button Assembly" on page 51.
7. Replace the fan. See "Replacing the Fan" on page 48.
8. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
9. Replace the touchscreen board. See "Replacing the Touchscreen Board" on page 32.
10. Replace the converter board. See "Replacing the Converter Board" on page 29.
11. Follow the instructions from step 3 to step 5 in "Replacing the Hard Drive" on page 24.
12. Follow the instructions from step 4 to step 6 in "Replacing the Optical Drive" on page 27.
13. Replace the back cover. See "Replacing the Back Cover" on page 20.
14. Replace the stand. See "Replacing the Stand" on page 18.
15. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
16. Follow the instructions in "After Working Inside Your Computer" on page 11.

System Setup

Overview

Use the system setup to utility to:

- Get information about the hardware installed on your computer, such as the amount of RAM, the size of the hard drive, and so on.
- Change the system configuration information.
- Set or change a user-selectable option, such as the user password, type of hard drive installed, enabling or disabling base devices, and so on.

CAUTION: Unless you are an expert computer user, do not change the settings in the system setup program. Certain changes can make your computer work incorrectly.

NOTE: Before you change system setup, it is recommended that you write down the system setup screen information for future reference.

Entering System Setup

1. Turn on (or restart) your computer.
2. During POST, when the DELL logo is displayed, watch for the F2 prompt to appear and then press <F2> immediately.

   NOTE: The F2 prompt indicates that the keyboard has initialized. This prompt can appear very quickly, so you must watch for it, and then press <F2>. If you press <F2> before the F2 prompt, this keystroke is lost. If you wait too long and the operating system logo appears, continue to wait until you see the operating system's desktop. Then, turn off your computer and try again.

System Setup Screens

The system setup screen displays current or changeable configuration information for your computer. Information on the screen is divided into three areas: the **setup item**, active **help screen**, and **key functions**.

Setup Item — This field appears on the left side of the system setup window. This field is a scrollable list containing features that define the configuration of your computer, including installed hardware, power conservation, and security features. Scroll up and down the list with the up- and down-arrow keys. As an option is highlighted, the **Help Screen** displays more information about that option and available settings.	**Help Screen** — This field appears on the right side of the system setup window and contains information about each option listed in the **Setup Item**. In this field you can view information about your computer and make changes to your current settings. Press the up-arrow and down-arrow keys to highlight an option. Press <Enter> to make that selection active and return to the **Setup Item**. **NOTE:** Not all settings listed in the **Setup Item** are changeable.
Key Functions — This field appears below the **Help Screen** and lists keys and their functions within the active system setup field.	

System Setup Options

NOTE: Depending on your computer and installed devices, the items listed in this section may appear, or may not appear exactly as listed.

Main — System Information	
`BIOS Revision`	Displays the BIOS revision number
`BIOS Build Date`	Displays the BIOS build date in mm/dd/yyyy format
`System Name`	Displays the computer model
`System Time`	Displays the current time in hh:mm:ss format
`System Date`	Displays the current date in mm/dd/yyyy format
`Service Tag`	Displays the Service Tag of the computer
`Service Tag Input`	Allows you to enter the Service Tag of the computer if the Service Tag field is empty
`Asset Tag`	Displays the asset tag of the computer when the asset tag is present

Main — Processor Information	
Processor Type	Displays the processor type
Processor ID	Displays the processor ID
Processor Core Count	Displays the number of core(s)
Processor L1 Cache	Displays the processor L1 cache size
Processor L2 Cache	Displays the processor L2 cache size
Processor L3 Cache	Displays the processor L3 cache size

Main — Memory Information	
Memory Installed	Indicates the amount of memory installed in MB
Memory Running Speed	Indicates the memory speed in MHz
Memory Technology	Indicates the type of installed memory

Main — SATA Information	
SATA 1	
Device Type	Displays the SATA device connected to the SATA 1 connector
Device ID	Displays the serial number of the SATA 1 device
Device Size	Displays the size of the SATA 1 device in GB, if the device is a hard drive
SATA 2	
Device Type	Displays the SATA device connected to the SATA 2 connector
Device ID	Displays the serial number of the SATA 2 device
Device Size	Displays the size of the SATA 2 device in GB, if the device is a hard drive

Advanced — Processor Configuration	
Intel Hyper-Threading Technology	Allows you to enable or disable Intel Hyper-Threading Technology feature for the processor — Enabled or Disabled (Enabled by default)
Intel(R) SpeedStep Technology	Allows you to enable or disable Intel SpeedStep Technology feature for the processor — Enabled or Disabled (Enabled by default)
Intel(R) Virtualization Technology	Allows you to enable or disable Intel Virtualization Technology feature for the processor — Enabled or Disabled (Enabled by default)
CPU XD Support	Allows you to enable or disable the execute disable mode for the processor — Enabled or Disabled (Enabled by default)
Limit CPUID Value	Allows you to limit the maximum value the processor standard CPUID function supports — Enabled or Disabled (Disabled by default)
Multi Core Support	Allows you to enable or disable multi-core processor — Enabled or Disabled (Enabled by default)
Intel(R) Turbo Boost Technology	Allows you to enable or disable Intel Turbo Boost Technology mode for the processor — Enabled or Disabled (Enabled by default) **NOTE:** The Intel Turbo Boost Technology option is displayed only if this feature is supported by the processor.

Advanced — USB Configuration	
Rear USB Ports	Allows you to enable or disable the rear USB ports — Enabled or Disabled (Enabled by default)
Side USB Ports	Allows you to enable or disable the side USB ports — Enabled or Disabled (Enabled by default)

Advanced — Onboard Device Configuration	
Onboard Audio Controller	Allows you to enable or disable the onboard audio controller Enabled or Disabled (Enabled by default)
SATA Mode	Displays the SATA mode on your computer (ATA by default)
Onboard LAN Controller	Allows you to enable or disable the onboard LAN controller Enabled or Disabled (Enabled by default)
Onboard LAN Boot ROM	Allows you to boot your computer from a network Enabled or Disabled (Disabled by default)

Boot	
Numlock Key	Allows you to set the status of the Num Lock key during boot On or Off (On by default)
Secure Boot Control	Allows you to enable or disable the secure boot control **NOTE:** To enable this feature, the computer must be in the UEFI boot mode.
Load Legacy OPROM	Allows you to load the legacy OPROM when in the UEFI boot mode.
Keyboard Errors	Allows you to enable or disable the display of keyboard-related errors during boot Report or Do Not Report (Report by default)
USB Boot Support	Allows you to enable or disable booting from USB mass storage devices such as hard drive, optical drive, USB key, and so on Enable or Disable (Enabled by default)

Boot (Continued)	
Boot Mode	Allows you to choose a boot mode for your computer Legacy or UEFI (Legacy by default)
1st Boot Device	Displays the first boot device
2nd Boot Device	Displays the second boot device
3rd Boot Device	Displays the third boot device
4th Boot Device	Displays the fourth boot device
5th Boot Device	Displays the fifth boot device
Hard Disk Drivers	Displays the boot sequence of the hard drive
USB Storage Drivers	Displays the boot sequence of the USB storage drive
CD/DVD ROM Drivers	Displays the boot sequence of the optical drive

Power	
Wake Up by Integrated LAN/WLAN	Allow the computer to be powered on by special LAN or wireless LAN signals Enabled or Disabled (Disabled by default)
AC Recovery	Allows you to configure the behavior of your computer after it recovers from a power failure Power Off, Power On, or Last Power State (Power Off by default)
Auto Power On	Allows you to enable or disable the computer from turning on automatically Enabled or Disabled (Disabled by default)
Auto Power On Mode	Allows you to set the computer to turn on automatically every day or on a preselected date; This option can be configured only if the Auto Power On mode is set to Enabled Everyday or Selected Day (Selected Day by default)
Auto Power On Date	Allows you to set the date on which the computer must turn on automatically; This option can be configured only if the Auto Power On mode is set to Enabled 1 to 31 (15 by default)

Auto Power On Time	Allows you to set the time at which the computer must turn on automatically; This option can be configured only if the Auto Power On mode is set to Enabled hh:mm:ss (12:30:30 by default)

Security	
Supervisor Password	Displays the supervisor password
User Password	Displays the user password
Set User Password	Allows you to set, change, or delete the user password
Password Check	Allows you to enable password verification either when you attempt to enter system setup or each time the computer boots Setup or Always (Setup by default) **NOTE:** Password Check option is visible only when the user password is set.
Set Supervisor Password	Allows you to set, change, or delete the supervisor password. The supervisor password controls access to the system setup utility **NOTE:** Deleting the supervisor password deletes the user password. Set the supervisor password before setting the user password.
User Access Level	Allows you to restrict or provide access to the system setup utility No Access, View Only, Limited, or Full Access (Full Access by default) • No Access: Restricts users from editing system setup options • View Only: Allows users to only view system setup options • Limited: Allows users to edit limited system setup options • Full Access: Allows users to edit all system setup options except the supervisor password

Exit	
Save Changes and Reset	Allows you to exit system setup and save your changes
Discard Changes and Reset	Allows you to exit system setup and load previous values for all system setup options
Load Defaults	Allows you to load default values for all system setup options

Boot Sequence

This feature allows you to change the boot sequence for devices.

Boot Options

- **USB Floppy Device** — The computer attempts to boot from the USB floppy drive. If no operating system is on the drive, the computer generates an error message.
- **Internal HDD Devices** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.
- **USB Storage Device —** Insert the memory device into a USB port and restart the computer. When `F12 Boot Options` appears in the lower-right corner of the screen, press <F12>. The BIOS detects the device and adds the USB flash option to the boot menu.
- **Internal ODD Devices** — The computer attempts to boot from the optical drive. If no disc is in the drive, or if the disc is not bootable, the computer generates an error message.

  NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.
- **Onboard NIC Device** — The computer attempts to boot from the network. If no operating system is found on the network, the computer generates an error message.

  NOTE: To boot from the network, ensure that the `Onboard LAN boot ROM` option is enabled in the system setup. See "System Setup Options" on page 82.

Changing Boot Sequence for the Current Boot

You can use this feature to change the current boot sequence, for example, to boot from the optical drive to run Dell Diagnostics from the *Drivers and Utilities* disc. The previous boot sequence is restored at the next boot.

1. If you are booting from a USB device, connect the USB device to a USB port.
2. Turn on (or restart) your computer.
3. When `F2 Setup, F12 Boot Options` appears in the lower-right corner of the screen, press <F12>.

   NOTE: If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop. Then, shut down your computer and try again.

   The **Boot Device Menu** appears, listing all available boot devices.
4. On the Boot Device Menu choose the device you want to boot from.

   For example, if you are booting to a USB memory key, highlight **USB Storage Device** and press <Enter>.

   NOTE: To boot to a USB device, the device must be bootable. To ensure that your device is bootable, check the device documentation.

Changing Boot Sequence for Future Boots

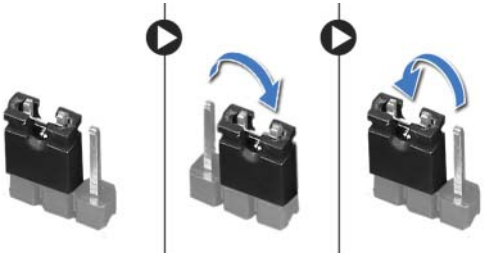
1. Enter system setup. See "Entering System Setup" on page 81.
2. Use the arrow keys to highlight the **Boot** menu option and press <Enter> to access the menu.

   NOTE: Write down your current boot sequence in case you want to restore it.
3. Press the up- and down-arrow keys to move through the list of devices.
4. Press plus (+) or minus (–) to change the boot priority of the device.

Clearing Forgotten Passwords

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
5. Locate the 3-pin password reset jumper (PWCLR1) on the system board. See "System Board Components" on page 13.
6. Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2.



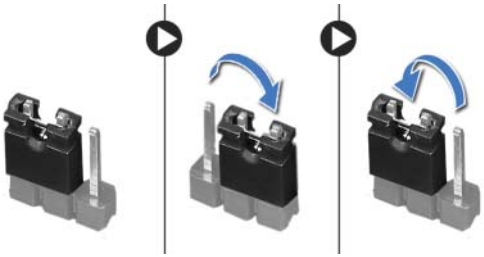
7. Wait for approximately five seconds to clear the password setting.
8. Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3.
9. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
10. Replace the back cover. See "Replacing the Back Cover" on page 20.
11. Replace the stand. See "Replacing the Stand" on page 18.
12. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
13. Follow the instructions in "After Working Inside Your Computer" on page 11.

Clearing CMOS Settings

WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 9. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 11. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

WARNING: The computer must be disconnected from the electrical outlet to clear the CMOS setting.

1. Remove the stand cover. See "Removing the Stand Cover" on page 15.
2. Remove the stand. See "Removing the Stand" on page 17.
3. Remove the back cover. See "Removing the Back Cover" on page 19.
4. Remove the system-board shield. See "Removing the System-Board Shield" on page 37.
5. Locate the 3-pin CMOS reset jumper (CMOCL1) on the system board. See "System Board Components" on page 13.
6. Remove the 2-pin jumper plug from pins 2 and 3 and fix it on pins 1 and 2.



7. Wait for approximately five seconds to clear the CMOS settings.
8. Remove the 2-pin jumper plug from pins 1 and 2 and replace it on pins 2 and 3.
9. Replace the system-board shield. See "Replacing the System-Board Shield" on page 38.
10. Replace the back cover. See "Replacing the Back Cover" on page 20.
11. Replace the stand. See "Replacing the Stand" on page 18.
12. Replace the stand cover. See "Replacing the Stand Cover" on page 16.
13. Follow the instructions in "After Working Inside Your Computer" on page 11.

Flashing the BIOS

The BIOS may require flashing when an update is available or when replacing the system board. To flash the BIOS:

1. Turn on the computer.
2. Go to **dell.com/support**.
3. If you have your computer's Service Tag, type your computer's Service Tag and click **Submit**.

   If you do not have your computer's Service Tag, click **Detect Service Tag** to allow automatic detection of your computer's Service Tag.

   NOTE: If the Service Tag cannot be detected automatically, select your product under the product categories.
4. Click **View Drivers and Downloads**.
5. In the **Operating System** drop-down, select the operating system installed on your computer.
6. Click **BIOS**.
7. Click **Download File** next to the latest version of the BIOS for your computer.
8. On the next page, select **Single-file download** and click **Continue**.
9. Save the file and once the download is complete, navigate to the folder where you saved the BIOS update file.
10. Double-click the BIOS update file icon and follow the instructions on the screen.